

ATOMIC ENERGY *newsletter*®

A SERVICE FOR INDUSTRY BUSINESS ENGINEERING AND RESEARCH
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Dear Sir:

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The U. N. Conference on Peaceful Uses of Atomic Energy attracted more than 2,000 scientists and atomic energy officials to its Aug. 8-20, 1955, sessions at Geneva. Well attended, and with a vast number of papers presented, plans are being made by the U. N. for future conferences of this nature. (Other CONFERENCE news, p. 5 this LETTER.)

A symposium on "Atoms for Profit" will be held at the national meeting of the American Institute of Chemical Engineers, at Lake Placid, N.Y., Sept. 25-28, 1955. Reactor Fuel Processing--A New Business?, will be discussed by B. V. Coplan and J. K. Davidson, Knolls Atomic Power Laboratory, Schenectady, N.Y.; The Problem of Insurance in Atomic Energy Development will be presented by M. M. Braidech, Nat. Bd. of Fire Underwriters, N.Y.; Gamma Irradiation Facility to Control Insect Infestation in Flour, Meal or Grain, will be discussed by L. E. Brownell, J. J. Bulmer, and J.V. Nehemias, Univ. of Michigan; and the Fuel Processing Factor in Nuclear Power will be covered by G. White, Vitro Corp. of America, N.Y.

A gross volume of \$30,000 to \$40,000 per day on its Geiger and scintillation counters is being done by El-Tronics, Inc., Pennsylvania manufacturer of nucleonic and electronics equipment, according to T.P. Tanis, president. He said most of the company's volume is being done on the \$100-\$150 retail price level, through its 25 distributors. In addition, he said, the company is the sole supplier to Sears, Roebuck & Co., and Simpson-Sears, Ltd. (Canada), of Geiger counters and scintillation-type instruments. (Other PRODUCT news, p. 4 this LETTER.)

A \$9,000,000 contract has now been negotiated by the USAEC with H.K. Ferguson Co., Cleveland, O., for modifications and alterations to uranium-235 production plants at Oak Ridge; to laboratories there; and for occasional new construction there. (Other CONTRACTS LET, BIDS ASKED, p. 5 this LETTER.)

Atlas Corp., investment trust headed by Floyd B. Odlum, held approximately \$3.5 million in shares of uranium mining concerns, out of total common stock holdings of approximately \$26.4 million, on June 30, 1955, Mr. Odlum said in his mid-year report, released last fortnight. Other uranium investments of Atlas include \$10 million in Wasatch Corp., which holds 1,400,000 shares of Lisbon-Uranium Corp., plus \$15.6 million in the wholly-owned Hidden Splendor Mining Co. Mr. Odlum observed that Atlas's investments are not on the basis of military demands for uranium, but rather on commercial demands for power plant use. (Other FINANCIAL news, p. 3 this LETTER.)

Although Buckles Algoma Uranium Mines, Ltd., has several production proposals being considered for the proven uranium orebody on its Blind River (Canada) property, it is now examining its property for copper, company president J. B. Aird said in Toronto last fortnight. Mr. Aird explained that since much of the property had been staked prior to the uranium rush on the strength of copper showings, present high copper prices justify a careful new appraisal of the values in the holdings.

ATOMIC ENERGY BUSINESS REPORTS...

NUCLEAR REACTOR PLANS OF TWO GROUPS OK'D; TWO OTHERS REJECTED:- Plans have now been approved by the USAEC for a 180,000-kw. nuclear reactor plant, as proposed by the Nuclear Power Group, led by Commonwealth Edison Co., Chicago, and for a 100,000-kw. nuclear power plant proposed by another group headed by Detroit Edison Co. The Nuclear Power Group will erect a boiling-water-reactor plant 44 miles southwest of Chicago at the junction of the Kankakee and Des Plaines rivers. Detroit Edison and associates will build a fast breeder reactor plant at Monroe, Mich. Rejected by the USAEC were plans of Yankee Atomic Electric Power Co. to build a 100,000-kw. reactor plant. Plans of Consumers Public Power of Nebraska for a 75,000-kw. reactor plant were also rejected. The groups with acceptable proposals can lease from the USAEC fissionable materials at a special rate for a seven-year period ending July 1, 1962; they also can get research assistance from the USAEC and will be paid for technical and economic information they develop. (Meanwhile, Yankee Atomic, despite the rejection, has asked Securities and Exchange Commission approval for the \$24 million financing that would be needed for its project, explaining that it intends to revise its plans to acceptable form.)

ENGINEERING TEST REACTOR PROPOSALS REJECTED:- Proposals of Babcock & Wilcox, jointly with Lockheed Aircraft, and J. A. Jones Construction Co., Charlotte, N.C., to build an engineering test reactor at the National Reactor Testing Station, Idaho Falls, Idaho, have now been rejected by the USAEC. The Commission said the \$15 million job could be built and operated by the USAEC at a lower over-all cost to the government than under the private proposals. Under the private proposals, the firms would have built and operated the reactor, leasing time for testing purposes to the USAEC. Architect-engineer on the job is Kaiser Engineers, Oakland, Calif. Construction contractor has not yet been appointed.

NEW UNITS FORMED FOR NUCLEAR WORK:- Union Carbide Nuclear Co. has now been set up by Union Carbide & Carbon Corp., New York, to "integrate its diverse activities in the atomic energy field", Morse G. Dial, UC&C president said in New York last fortnight. Most of UC&C's divisions sell to the USAEC or have contracts. They include U. S. Vanadium Co., mining and processing uranium ore; Linde Air Products Co., doing research on uranium compounds; Electro Metallurgical Co., producing and selling to the USAEC special metals; National Carbon Co., making a highly purified graphite for reactors; and Carbide & Carbon Chemicals Co., operating on a cost-plus-fixed-fee basis the gaseous diffusion plants producing uranium-235 at Oak Ridge and Paducah, as well as Oak Ridge National Laboratory....In the chemical field, Davis Chemical Co., (div. of W. R. Grace & Co.), has formed an Atomic Developments department. It will conduct (with Rare Earths, Inc., a wholly owned subsidiary), a program of expanded production, research, and development on rare earths and thorium....A separate department to direct research and development work on nuclear powered aircraft has now been set up at Convair (div. of General Dynamics Corp.) in Fort Worth, Tex. According to A. C. Esenwein, Convair vice-president and plant manager, the department was established so that Convair can more effectively handle its "increasing obligations" to the U. S. Air Force in the field of nuclear aircraft development.

NEW CLIENT OBTAINED BY NUCLEAR CONSULTING FIRM:- Bell Aircraft Corp., Buffalo, N. Y., has now retained Nuclear Science & Engineering Corp., Pittsburgh, Pa., to advise Bell in atomic energy matters. L. D. Bell, president of Bell Aircraft, said his firm would like to see how its present facilities and technical people can be used for atomic energy work. Bell would also like to use nuclear techniques in its present manufacturing processes, he explained.

NUCLEAR POWER PLANT FOR PHILIPPINE ISLANDS:- The prospects for an economic application of nuclear energy in electric power plants in its properties in the Philippine Islands are being studied by General Public Utilities Corp., New York, according to A. F. Tegen, president. Mr. Tegen told stockholders, in his mid-year report, that comparative fuel costs may make it more economically feasible to install such plants in the Philippine properties of G.P.U. than in the domestic installations of the company. This is believed to be the first U. S. project aimed at building a nuclear central station in a country outside the U.S.

ATOMIC ENERGY FINANCIAL REPORTS...

MUTUAL FUNDS SPECIALIZING IN ATOMIC FIELD SHOW GAINS:- Science & Nuclear Fund, the newest, which started April 28, 1955, with assets of \$117,000 had net assets of \$543,000 on July 31st last, Donald F. Bishop, Pres. told stockholders last week. The assets are invested in 40 companies in the nuclear and related fields.... Axe Science & Electronics Corp., another such fund, on June 30th had about 40% of its assets in common stocks, half of them securities of companies engaged in activities relating to nuclear science. Of this half, equal amounts were in uranium mining and in companies manufacturing equipment; the largest part of the remainder was in the electronics field. Asset value had increased from \$9.15 to \$9.29 a share in the period from Feb. 4, 1955 to June 30, 1955....Atomic Development Mutual Fund, the oldest atomic mutual operation, reported net assets of \$14.37 per share, June 30, 1955 compared with \$10.88 per share June 30, 1954. Largest single holdings are uranium mining shares which account for 30.1% of the total assets of the Fund.

URANIUM SHARES SHOW WEAKNESS IN U. S. AND CANADA:- Contributing to the nervousness caused by the "special price deadline" (this LETTER, Aug. 9th) which puts limitations on Canadian government uranium buying, was the statement last week at the Geneva conference on energy from fusion reactions (page 5 this issue). (Speculative interest focused on Lindsay Chemical Co., U. S. thorium processor and owner of thorium mineral deposits, when the Geneva conference was told of thorium's role in atomic energy. Lindsay, which had drifted to 33 from a high of 47 this year, on lack of trading interest, rose to 37.)

OFFICER PURCHASES AND SALES OF STOCK MADE IN FIRMS IN ATOMIC FIELD:- Gordon Dean, newly appointed vice-president-nuclear energy, of General Dynamics Corp., has now bought 15,000 common shares of G-D on stock option. The option was part of his recent employment agreement with the firm. (Mr. Dean, former Chairman, U. S. Atomic Energy Commission, is associated with Lehman Bros., investment banking firm, and is a director of Norden-Ketay Corp. He is also chairman of Nuclear Science & Engineering Corp., which was set up by Lehman and Norden-Ketay and which is controlled by Norden-Ketay.)....Raymond J. Higgins, assistant vice-president, Shattuck Denn Mining Corp., sold last month 2,400 capital shares, reducing his direct holdings to 6,600. Shattuck Denn is negotiating a joint venture agreement with N. J. Zinc and Texas Co. covering prospecting, acquiring, milling, etc. of uranium ores on the Navajo Indian Reservation in Arizona, according to Thomas Bardon, president, Shattuck Denn.... Ralph J. Cordiner, president, General Electric Co., bought 4,500 common shares last June, increasing his direct holdings to 10,395 at that time, while Clarence H. Linder, vice-president, G-E, bought 2,070 common shares last month making his direct holdings 4,710 shares following the purchase. General Electric Co. is now involved in more phases of USAEC atomic energy work than any other U. S. firm, and is taking active, aggressive steps to commercially exploit its manpower ability and plant facilities.

ANALYSES AVAILABLE:- A special report on General Dynamics Corp. may be obtained from Thomson & McKinnon, 11 Wall St., N.Y.C....A discussion of Westinghouse Electric is available from Talmadge & Co., 111 Broadway, N. Y. C....New Jersey Zinc is reviewed by Peter P. McDermott & Co., 44 Wall St., N. Y. C.

NEW BOOKS & OTHER PUBLICATIONS...on nuclear energy subjects...

Nuclear Notes for Industry: Issue of Aug. 11, 1955. Guide to USAEC-developed unclassified information of industrial interest.--USAEC, Oak Ridge, Tenn. (n/c).

Introductory Nuclear Physics; 2nd edition. By David Halliday, prof. of physics, U. of Pittsburgh. Basic points of nuclear physics. 493 pages. (\$7.50)...
Nuclear & Radiochemistry, by Gerhart Friedlander and Joseph W. Kennedy. A revised edition of the authors' earlier Introduction to Radiochemistry. 468 pages. (\$7.50). -- John Wiley & Sons, Inc., New York 16, N. Y.

Nuclear Power Reactors. Report to USAEC by nuclear power project staff of Foster-Wheeler Corp., N. Y., and Pioneer Service & Engineering Co., Chicago. March, 1955. 30 pages, --Sup't. of Documents, Wash. 25, D. C. (15¢)

What Nurses Should Know About Radioisotopes, by D. L. Tabern and G. I. Gleason. Reprint from Aug. 1955 Modern Hospital. Available on request for nursing personnel. --Abbott Laboratories, N. Michigan, Ill.

NEW PRODUCTS, PROCESSES & INSTRUMENTS...in the nuclear field...

PRODUCTS MARKETING BY MANUFACTURERS:- Pulse height analyzers, models 3500, and 3301, of 100 and 256 channels counting capacity, use magnetic core memory circuits. Circuits are based on Argonne National Laboratory model 101 design. Rates of accumulation of data, manufacturer states, may exceed one million counts per minute.-- Radiation Instrument Development Laboratory, Chicago 36, Ill.

Liquid scintillation spectrometer, which may be used for counting beta samples in solution with liquid phosphors, is now offered by this manufacturer. Suggested uses include counting tritium in ground water studies, where pollution and water disposal problems are involved.--Packard Instrument Co., La Grange, Ill.

PRODUCTS IN DEVELOPMENTAL STAGE:- An electrostatic nuclear battery, being developed at Radiation Research Corp., was described recently to the ninth annual Battery Research and Development Conference, Asbury Park, N.J. Using polystyrene insulation, and a 10-millicurie strontium-90 beta particle source, one such battery has an output current of 50 micromicroamps., at zero voltage, and develops over 20,000-volts. Total volume is 1-cu. inch, including shielding to reduce external radiation to acceptable USAEC tolerance. The firm also has another type, using a tritium source, under development, John H. Coleman, of Radiation Research told the Conference.

Ergot in radioactive form has now been produced in a cooperative research study by the University of Connecticut and Argonne National Laboratory. The radioactive ergot will enable tracer studies to be made of the action of alkaloids on the nervous and muscular systems of the body, according to Dr. Arthur E. Schwartzling, of the U. of Conn. School of Pharmacy, and Dr. Norbert J. Scully, Argonne National Laboratory, who directed the research study.

An inexpensive fiber building board that filters radioactive fallout, poison gases, and disease laden particles has now been developed at the U.S. Forest Products Laboratory, Madison, Wisc., under contract with the U.S. Army Chemical Corps. Developers of the fiberboard are Dr. Alfred J. Stamm, research scientist at the laboratory, and Dr. Harold Tarkow, his assistant; three years of work by these men went into the development. Certain chemicals (the nature of which is secret) are used to impregnate the board. The diffusion board will permit oxygen and carbon dioxide to pass through it, while screening out harmful particles and gases. It is now being extensively tested at the Army Chemical Center, Md. for use in shelters.

NEW APPLICATIONS OF RADIATION INSTRUMENTS:- A new technique for measuring the pumping efficiency and status of heart action speedily and accurately has now been developed by the radioisotope research unit at the Bronx Veterans Administration hospital, New York City. The technique involves an apparatus set-up consisting of a Geiger counter, a count-rate meter, an amplifier, an oscilloscope, and a recording camera. A radioactive substance is first injected into the patient's blood stream. The blood from an artery is then directed into a specially designed Geiger counter, and the output of a sensitive count-rate meter is amplified so that it may be viewed as a moving spot on the oscilloscope screen. The moving spot is then photographed with a recording camera to form a pattern of curves, known as arterial dilution curves. From this strip of film, a graph of heart action can be plotted quickly to provide an accurate measurement of cardiac output. Dr. Rosalyn Yalow, senior physiologist at the Bronx VA hospital, devised the equipment with the assistance of Daniel Bibona.

PRODUCT PRICES:- Prices at which the USAEC will sell heavy water and normal uranium metal to those countries whose governments have bi-lateral agreements with the U.S. Government have now been established by the USAEC. Heavy water will be sold at \$28/lb., and normal uranium metal at \$40/kilogram (2.2-lbs.) Enriched uranium, which is for use in nuclear research reactors under terms of the bi-lateral agreements, will be leased by the USAEC at \$25 per gram of contained uranium-235 (for uranium enriched to 20% in uranium-235).

Reduced prices for Cholesterol-4-C-14 were put into effect the first of this month by Beta Laboratories, Inc., Phila. 6. Pa. The firm now offers this radioactive carbon-labeled compound at \$9 per microcurie for 2 to 99 microcuries, at \$6.50 per microcurie for 100 to 499, and with proportionate reductions for larger strengths.

SPECIAL REPORT: International Conference on Peaceful Uses of Atomic Energy, Geneva, Switzerland, Aug. 8-20, 1955: The more than 1,000 scientific papers presented at this conference, which attracted 1,260 delegates from 72 nations and 7 specialized agencies of the United Nations, made it possible for those attending to hear but a fraction of the papers. Of great value, therefore, will be the 6 volumes of these papers, known as the "Geneva Series on the Peaceful Uses of Atomic Energy", which will be published in the Spring, 1956, by D. Van Nostrand Co., New York 3. To be edited by Dr. J. G. Beckerley, former director of classification for the USAEC, provisional titles of the volumes will be (1) Safety Aspects of Nuclear Reactors, (2) Power Reactors, (3) Research Reactors, (4) Nuclear Fuels, (5) Atomic Raw Materials, (6) Applications of Nuclear Radiation in Food and Agriculture. Prices set by Van Nostrand are \$7.50 per volume, or \$42.50 for the set.

Business Aspects of Conference: The prominence given to the statements made by Dr. H.J. Bhahba, India, and Mr. L. Strauss, USAEC, at the Conference, on the possibilities of commercial use of the energy from fusion reactions, caused declines in Canadian and U.S. uranium mining shares. (Experimental work has of course been under way under USAEC sponsorship on such applications, but the fact that lithium metal, and deuterium, a heavy isotope of hydrogen would be needed for fusion reactions, and no uranium, overshadowed the guarantees that the U.S. and Canadian governments have given uranium producers--that all uranium mined will be bought by the respective governments until March, 1962.)

Among U.S. companies exhibiting and soliciting orders at the industrial exhibits held in conjunction with the Conference, first sale of a nuclear reactor for commercial power was made by Westinghouse Electric Co., to The Fiat Co., the large Italian industrial firm. Delivery will be in approximately two years, and U.S. Government approval is necessary. While sales had also been made by U.S. instrument companies who had exhibits in Geneva, the Westinghouse sale was the largest in dollar volume.

CONTRACTS LET, BIDS ASKED...on atomic energy projects...

CONTRACTS LET:- As predicted in this LETTER (Aug. 9, 1955), Combustion Engineering, Inc., New York, has now obtained a USAEC contract to design and develop a nuclear reactor for a small submarine for the U.S. Navy. The contract allows Combustion Engineering to do research and development and to be reimbursed by the Government for 75% of expenditures up to \$3 million on such research.

Trace Elements Corp., Grand Junction, Colo., has now been awarded a contract by the USAEC to build and operate a uranium ore processing plant at Maybell, Colo. The mill will process uranium-bearing ores from northwestern Colorado, including its own ores and those of independent producers. The mill is expected to be operating by late 1956 or early 1957.

BIDS ASKED:- Bids have now been asked by the USAEC's Reactor Development Div., Washington 25, D.C., for construction of a small nuclear reactor to be used for testing reactor cores. Cost of the reactor (high pressure, water-moderated, water cooled) is estimated to be between \$250,000 and \$500,000.

RAW MATERIALS...prospecting, mining, marketing...

UNITED STATES:- A new uranium strike has now been made in Gunnison County, Colo., near Sargents, according to H. E. Dyne, Stockton, Calif., one of the owners of a group of claims being prospected there.....Thirty-three additional uranium claims in the La Sal Mountains, in Grand County, Utah, have now been acquired by Moab Mines, Inc., of Moab, Utah.....The U.S. Vanadium Co's uranium processing mill at Uravan, Colo., is now being expanded under an amended contract recently negotiated by the firm with the USAEC.

CANADA:- Bicroft Uranium Mines, Ltd., has now received a letter of intent from Eldorado Mining & Refining, Ltd., the Government purchasing agent, that it will buy \$38,805,000 (gross) worth of uranium concentrates. The gross value is based on production of 1,000 tons of ore daily beginning Sept., 1956.

Sincerely,

The Staff,
ATOMIC ENERGY NEWSLETTER

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